

REMARKS

In the Office Action dated November 18, 2004, claims 44-99 are pending, claims 58, 59, 71, 82-84, 86 and 89-98 having been withdrawn from consideration. Claims 44-57, 60, 64-70, 72-75, 78-81, 85, 87, 88 and 99 are rejected and objection is made to claims 61-63, 76 and 77. Applicants appreciate the acknowledgement of patentable subject matter, at least in claims 61-63, 76 and 77.

The above amendments are made to further point out and distinctly claim the subject matter regarded as invention. Support for the amendments can be found throughout the specification; see particularly page 10, third paragraph. The language "automatically unpacking the object in a controlled manner without manual work" is added to further clarify the meaning of controlled removal. Thus, it is clear that no process steps have to be performed manually and the removal can take place at a predetermined time in a predetermined manner. The user does not have to wait for the right moment to remove the non-solidified powder material because this is performed automatically in a controlled manner.

New claim 100 presents prior allowed dependent claim 61 (combining claims 44 and 61) in independent form and new claim 101 presents prior allowed dependent claim 76 (combining claims 70, 75 and 76) in independent form. Applicants request that the new claims be entered as previously allowed.

Applicants note that the office action does not acknowledge receipt of the certified copy of the priority document transmitted by the International Bureau. Applicants request acknowledgement of receipt of the priority document.

Claims 44, 45, 48-57, 60, 64-66, 69, 70, 72-75, 80, 81, 85, 87, 88 and 99 are rejected under 35 U.S.C. §103(a) over O'Connor et al (US 5,846,370) in view of Caldari (US

5,662,158). O'Connor merely discloses "that the prototype can be readily lifted from the remaining powder at the end of the process cycle" (col. 4, lines 35-38). There is no teaching, nor even a hint of a suggestion, in O'Connor that the object be unpacked automatically without manual steps.

Caldarise does not make up for the deficiencies of O'Connor. In column 9, lines 45 to 51, Caldarise describes only that non-solidified powder is re-moved and that this can be done by shaking or immersing in a bath or solvent. These process steps are known to the person skilled in the art and are usually performed manually or at least the object has manually to be taken out of the device in which it was produced. There is no teaching, nor even a hint of a suggestion in Caldarise that this should be per-formed automatically without manual steps.

The examiner states that Caldarise teaches subjecting a casting mold to ultrasonic or high frequency vibration. However, this is to remove non-solidified powder from within the casting mold after it is removed from the 3D forming apparatus. There is no teaching or suggestion for removing automatically without manual steps the non-solidified powder from around the casting mold while in the forming apparatus so that the casting mold can then be shaken to remove internal powder.

Applicants respectfully submit that the claimed forming process is completed when the casting mold is removed from the 3D forming apparatus and the apparatus is freed to perform a new operation. Cleaning with ultrasonic or high frequency vibration after removal of the object from the forming apparatus is not part of the present invention. The present invention is directed to the object forming apparatus and method for forming the object. After treatments can also be performed on the object and still practice the present invention.

Automatically unpacking the object in a controlled manner without manual steps provides a process and a device with which the overall production process may be simplified, auto-mated and/or shortened and the precision during the production of the object is improved. As a result of the invention, the user does not necessarily have to be at the device after forming

the three-dimensional object and the removal of the non-solidified powder is performed in an auto-mated manner. Furthermore, the overall production process can be shortened, because a predetermined cooling-period can be used that is optimized for the type of three-dimensional object to be produced and for the powder used. The automatic removal can be performed very carefully and therefore the precision during the production is improved.

Thus, it is not seen how the presently claimed invention would have been obvious to one of ordinary skill in the art in view of O'Connor and Caldarise, each taken alone or the two in combination.

Claims 46, 47 and 78 are rejected under 35 U.S.C. §103(a) over O'Connor et al in view of Caldarise, and further in view of Newell et al (US 5,932,055). O'Connor and Caldarise are discussed above. Newell *fails* to make up for the deficiencies of O'Connor and Caldarise. There also is no teaching, nor even a hint of a suggestion, in Newell that the object be unpacked automatically without manual steps.

Claims 67, 68 and 79 are rejected under 35 U.S.C. §103(a) over O'Connor et al in view of Caldarise, and further in view of Grube et al (WO 92/08592). O'Connor and Caldarise are discussed above. Grube *fails* to make up for the deficiencies of O'Connor and Caldarise. There also is no teaching, nor even a hint of a suggestion, in Grube that the object be unpacked automatically without manual steps.

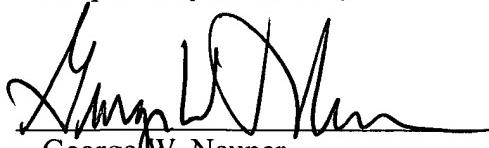
Thus, it is not seen how the presently claimed invention would have been obvious to one of ordinary skill in the art in view of any combination of O'Connor, Caldarise, Newell and Grube.

In view of the discussion above, it is respectfully submitted that the present application is in a condition for allowance. Early and favorable action is requested.

If for any reason a fee is required, a fee paid is inadequate or credit is owed for any

excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit Account No. **04-1105**.

Date: January 18, 2005

Respectfully submitted,
By: 
George W. Neuner
Reg. No. 26,964

Edwards & Angell, LLP
P.O. Box 55874
Boston, MA 02205
(617) 439- 4444

Customer No. 21874

BOS2_472511.1